

Environmental Justice vs Carbon Capture and Storage

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I. Definition of Environmental Justice

According to the Environmental Protection Agency, Environmental Justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. California state law defines “environmental justice” to mean “fair treatment of people of all races, cultures, and incomes with respect to the development of environmental laws, regulations, and policies.”

- A. Environmental Justice Advocates would be more expansive and define environmental justice as everything in the EPA definition plus the avoidance of disproportionate environmental impacts on communities of low income residents and people of color.
 - 1. Cumulative health impacts on a region or community
 - 2. Fair and equitable use of government spending
 - 3. Health considerations share equal consideration with economic interests. If there are health related costs of \$3 billion per year in the SJV due to not meeting the Federal Health Standard, then spending ten times that amount to fix the problem should be a no brainer.
 - 4. Long term sustainability issues are very important.
 - 5. Priority should be to fix the health problem of dirty air and there may be co-benefits of a reduction in GHG emissions.
- B. The concept has been recognized by governmental agencies because it is generally recognized that low income and people of color communities are consistently located closer to polluting industries and toxic environments than richer and whiter communities.
- C. The air resources board has declared the entire San Joaquin Valley an environmental justice area minus a couple of areas in Bakersfield and Fresno dedicated exclusively to the super rich. The criteria for inclusion in this category was meeting or exceeding minimum levels of low income and people of color.
- D. People have a right to understand the environmental effects of projects which effect their environment. For example, educational opportunities covering all viewpoints around a project needs to be made available to people of low education levels. Unequal access to power allows the press and government to be used for the sole benefit and needs of the project and not the general population.

II. Examples of environmental justice situations in California

A. In Kettleman City, located in Kings County and the San Joaquin Valley, there live 1,500 residents with over 90 % being people of color and having low income.

1. Very near or bordering this unincorporated town is a regional hazardous waste dump, an oil depot, a distribution center, a farm that spreads sewage sludge from Los Angeles, high powered electrical transmission lines, a major Interstate Highway, a landfill receiving garbage from Los Angeles, a truck stop and freeway services, a major State Highway, and large quantities of regular pesticide spraying on surrounding farms. A few miles away a major 600 MW power plant has been recently approved by the California Energy Commission.
2. An abnormal series of ten birth defects have recently been discovered in this town over an 18 month period. A major investigation to determine possible causes of these birth defects has been undertaken by the state Department of Health and EPA.
3. It is clear that the people living in the town have had little to say about the location of so many potential environmental hazards, so close to where they have their homes. It is equally obvious that if this was a wealthy community, it would not have the same environmental dangers permitted in the same way.
4. When Kings County officials recently approved an expansion of the Chem Waste hazardous waste dump, it was clear that residents living nearby were not given adequate opportunity to participate in the decision nor were all the hazardous impacts already affecting the residents considered in any sort of cumulative way. To top it off, the decision to approve the expansion totally ignored the presence of the birth defect cluster. The residents held a 9 pm mass for these victims on the steps of the Kings County Government Building in late December, 2009 while Supervisors were inside giving their final vote of approval for the project.
5. Government officials did come to Kettleman City for a “listening session”.

B. San Joaquin Valley

1. The worst pollution levels in the United States according to the American Lung Association State of the Air report.
 - a. Bakersfield was the number 2 worst city for particulate levels.
 - b. Bakersfield was the number 1 worst city for ozone levels.
 - c. Local air district ozone plan calls for compliance with old federal standard by 2023.
 - d. Particulate plan calls for compliance by 2015.
 - e. Particulate levels have actually gotten worse in the SJV according to the American Lung Association. Ozone has

not improved either at any rate that would get us into compliance this century.

2. The local SJV Air Pollution Control District relies almost exclusively on tighter state and federal controls for mobile sources to reach local compliance with federal standards and it does little to control stationary sources even while it admits these mobile source controls will not be enough to reach their goals.
 - a. It allows new power plants to be permitted with emission reduction credits for criteria air pollution mitigation.
 - b. It allows interpollutant trading of SO_x emission reduction credits for particulate emissions of both PM 10 and PM 2.5.
 - c. It fails to regulate agricultural sources as the Clean Air Act requires such as extremely weak dairy rules and broad exceptions for open burning of agricultural waste.
 - d. It doesn't listen to anyone other than industry.

C. Arvin

1. Small rural town of 20,000 residents, mostly low income and people of color. Also, there are smaller towns and communities like Lamont and thousands of other rural residents living near Arvin.
2. Worst ozone levels in the San Joaquin Valley and in the United States.
3. Pollution drifts into Arvin from traffic and industry in Bakersfield, from 3 major highways, from agriculture including many factory dairies, from local composting operation of organic waste from LA, from two major oil fields, and from most points north in the rest of the San Joaquin Valley.
4. No signs of improvement the past 6 years for both ozone levels in Arvin and pm 2.5 levels in nearby Bakersfield.
5. The question must be asked if any new pollution sources, such as large, fossil fuel, power plants, should be allowed in the Southern San Joaquin Valley without complete physical mitigation or greater reduction of pollution sources elsewhere in the immediate area.
6. We are seeing a rapid expansion of biomass incinerators and significant growth in fossil fuel power plants, all under the guise of producing less GHG intensive energy but all adding significant air pollution to the SJV, exporting energy to metropolitan parts of the state, and importing fuel from metropolitan parts of the state.
7. There is a proposal coming up for approval this year in Kern County to take all of southern California's sewage sludge, truck it up to Lost Hills, and incinerate it as a form of renewable energy. What will be hidden in the project is the energy required to dry the sludge enough to where it will burn, and of course, criteria air pollutants will be all out of proportion when

compared to latest technology natural gas power plants like Avenal.

III. Environmental Justice considerations relating to CCS

A. AB 32 legislation has specific language giving safeguards to environmental justice communities as regulations are made to lower GHG emissions.

1. Section 38562 of AB 32, California's Global Warming Emissions Reduction Act, specifically states that measures designed to decrease CO₂ emissions shall neither "...disproportionately impact low-income communities" nor "...interfere with, efforts to achieve and maintain federal and state ambient air quality standards and to reduce toxic air contaminant emissions," and shall "consider overall societal benefits, including reductions in other air pollutants..." and other benefits "...to the environment, and public health",
2. An Environmental Justice Advisory Committee was mandated to review AB 32 implementation for environmental justice issues.
3. Protocol development for assessing the environmental health effects from AB 32 implementation is in process currently.

B. Efficiency and cost of carbon capture and sequestration

1. HECA will apparently cost around 2 billion dollars and is being subsidized with over \$300 million from DOE. What does the US and the world gain from this project in terms of the need to reduce GHG emissions worldwide?
2. Carbon Capture and Storage development assumes it will be viable, safe, affordable, and that humans will continue to rely indefinitely on fossil fuel for the majority of their energy. The part about being affordable and a long-term solution are the big question marks. It doesn't make any sense as a short term solution either.
3. HECA project is not direct storage of CO₂ but enhanced oil recovery. No one has claimed that every last pound of CO₂ captured by the HECA project is going to be sequestered. HECA, in fact, will allow more fossil fuel to be withdrawn from geologic sources, hence, in effect, releasing far more CO₂ into the atmosphere.
4. HECA burns a dirty fuel (coal and pet coke) and requires the transportation of this dirty fuel for many hundreds of miles. A lot of criteria air pollutants will be released into the southern San Joaquin Valley. They will be formally mitigating these emissions through the purchase of emission reduction credits.
5. Compared to Avenal natural gas power plant, already approved by the CEC, HECA is much dirtier and does not reduce CO₂ emissions a tremendous amount as advertised.

C. History of BP, Rio Tinto, and Occidental Petroleum as they relate to Kern County and the HECA project.

1. BP has a bad safety record (Texas Refinery accident) and an ongoing catastrophic environmental problem in the Gulf of Mexico.
2. BP a few years ago was sending an ash like substance from a refinery in Carson or Wilmington to Kern County where it was illegally stockpiled at a remote farming location. It totaled more than 150,000 tons and was tested and classified as hazardous waste and trucked to a hazardous waste facility in Buttonwillow.
3. Rio Tinto was convicted of bribery charges recently in China and also locked out workers at a mine in Kern County this year for several months.
4. Occidental is no friend to CCS in that they have joined with other oil interests to fight or delay the implementation of AB 32.
5. Obviously, these are not the kind of companies that would seem to have a sincere interest in environmental justice issues and be trustworthy in their dealings with the public.
6. There are also serious water issues with HECA.

D. Fair use of government funds?

1. Does it take away from development of non-fossil fuel sources of energy?
2. Can the money be used for stimulating energy efficiency which gets bigger and quicker results towards decreasing GHG emissions and is also beneficial to lower income residents?
3. The cost per MWH is 9 times greater for HECA than for Avenal. Even with costs coming down to half it is still too much.
4. The GHG emissions are more than half of Avenal's, maybe significantly more, and not low enough to get us anywhere near the target of .02 MTCO₂E/MWH needed for 2050 goals.

E. Long term prospects for CCS?

1. Putting something we need to get rid of into a hole in the ground cannot be considered a long term solution.
2. It is not an efficient way to solve the problem of GHG emissions in environmental justice terms or economic terms.

F. Conclusions: How to make a project like HECA, or any other CCS project, more compatible with environmental justice concepts.

1. Capture CO₂ from cleaner, more local sources of fossil fuel like natural gas. Coal should not be brought to the SJV and pet coke should be buried or used as road base.
2. Make the enhanced oil recovery a super clean operation as well and also mitigate the pollution from the recovery and processing of the enhanced oil production.
3. Do not use prime farmland and even marginal irrigation water for these kinds of projects.
4. Decrease overall criteria air pollutants in the area of the project directly and not through the use of emission reduction credits.